

Application No. 10/033,586

### REMARKS

The Office Action of May 20, 2005 has been carefully considered. Reconsideration of this application, as amended, is respectfully requested. Claims 1-24 and 27-33 are pending in this application. Of these, claims 1, 28, 30, (relating to the vector method) 7, 32, 33 (relating to the bias method), and 11, 29, 31, (relating to the probabilistic method) are independent claims.

A reply to a Restriction Requirement filed April 19, 2005, withdrew claim 26 (which relates to using combinations of methods) from examination in the instant Application. For consistency in examination, this Amendment cancels claims 25, 26, and 27 (that relate to using combinations of methods), without estoppel, prejudice, or disclaimer to the subject matter contained therein. Applicant thus retains the right to present claims 25-27 in a divisional application.

In the specification, this Amendment corrects typographical errors and corrects minor editorial problems in paragraphs 0075 and 0086, as discussed in more detail herein. In claims (in addition to canceling claims 25-27 as discussed above), this Amendment amends claims 1-7, 9-12, 18-21, 22-24, and 28-31 and adds new claims 32 and 33. Support for these amendments is found in the Applicant's specification at paragraphs 0042-0063 (for changes relating to the vector method) 0064-0067 (for changes relating to the bias method), and 0068-0089 (for changes relating to the probabilistic method). No new matter is therefore believed to be introduced by these amendments.

#### 1. Response to Comments Regarding Applicant's Specification

On page 2, the Office Action sets forth comments regarding Applicant's specification. In response thereto, Applicant corrects the spelling of "Hofman" and clarifies the grounds for which the Hofmann reference is incorporated into the specification by reference. Further, Applicant submits that the flowchart 400 is not disclosed by Hofmann and should therefore not be labeled prior art. Accordingly, the comments regarding the specification are believed to have been addressed.

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## 2. Response to Rejection Under 35 USC 102 and 103

### 2.A Summary Of Rejections

The Office Action on pages 3-6 rejects claims 1-3, 5-11 and 28-31 under 35 U.S.C. § 102(e) as being anticipated by Heckerman et al. (U.S. Patent No. 6,742,003; hereinafter, *Heckerman*).

The Office Action on page 7 states that claims 4, 12-25 and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Heckerman* in view of Lim (U.S. Patent No. 6,574,378; hereinafter, *Lim*). However, the discussion of the rejections makes it appear that *only* claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Heckerman* in view of *Lim*. In responding to the rejection, Applicant therefore proceeds under the assumptions that the arguments presented by the Office Action, and not the summaries of the grounds for rejection, accurately summarize the position of the Office Action.

Further, the Office Action on page 7 states that claims 12-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Heckerman* in view of Dempster et al. (Dempster et al., "Maximum Likelihood from Incomplete Data via the EM Algorithm," Journal of Royal Statistical Society, B39, 1977, hereinafter, "Dempster"). However, the discussion of the rejections makes it appear that not only claims 12-24 but also claims 25 and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Heckerman* in view of Dempster. In responding to the rejection, Applicant therefore proceeds under the assumptions that the arguments presented by the Office Action, and not the summaries of the grounds for rejection, accurately summarize the position of the Office Action.

### 2.B Response To Rejection

Applicants respectfully traverse the rejections of claims 1-24 and 28-31, based on the assumptions above.

In response thereto, Applicant amends independent claims 1, 28, 30, (relating to the vector method) 7, (relating to the bias method) and 11, 29, 31, (relating to the probabilistic method) to more clearly set forth Applicant's invention. Applicant cancels claims 25 and 27 for the reasons set forth above. Further, Applicant introduces new

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claims 32 and 33 that set forth an apparatus and processor readable storage medium corresponding to the machine-implemented "bias" method recited in claim 7.

Applicant's invention recited in the independent claims is directed to different embodiments for extrapolating user profile information from user web page access patterns. That is, Applicant's claimed invention pertains to the prediction of an unknown profile attribute of a user (defined as a "test user") based on an analysis of a pattern of web pages accessed by the test user and sample data of web page access patterns of users having the profile attribute that is unknown to the test user.

In contrast, Heckerman discloses an interactive cluster visualization system for visualizing clusters (categories) and segments (summarized clusters) of data (see Heckerman Abstract). More specifically, Heckerman discloses an interactive cluster visualization system that "given a set of incoming data records, automatically determines proper categories for those records, without knowledge of any such category" (see Heckerman Column 4, lines 63-66).

Thus, unlike Heckerman that concerns the categorization of known data records that record characteristics of users, taken singly or in combination with Lim (which concerns the indexing and retrieval of images using visual keywords – see Abstract) and/or Dempster (which concerns the computation of maximum likelihood estimates from incomplete data – see Summary), Applicant's claimed embodiments (i.e., the vector method, the bias method, and the probabilistic method) for extrapolating user profile information from user web pages concerns the prediction of a user's unknown profile attribute.

More specifically:

(1) the vector method recited in independent claims 1, 28, and 30 compares a first data structure recording web page access patterns of a test user (i.e., with an unknown attribute) data structure with a plurality of a second data structure, each identifying clusters of web page access patterns of a sample data set of users having a known user profile attribute in common – where the known user profile attribute in common corresponds to the unknown user profile attribute of the test user;

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(2) the bias method recited in claim 7, 32, 33, assigns the unknown user profile attribute to the test user using a combination of computed bias values, which bias values are computed by computing the difference between (i) the actual number of users having a certain user profile attribute who visit a selected web page, and (ii) the product of the total number of users who visit the selected web page and the fraction of users having the certain user profile attribute as measured over the plurality of web pages;

(3) the probabilistic method recited in claims 11, 29, and 31 assigns a user profile attribute to the test user by performing an Expectation Maximization process while assuming that the test user's profile attribute determines whether the test user accesses a web page.

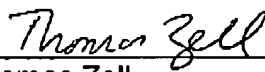
Accordingly, Applicant respectfully submits that independent claims 1, 28, 30, (relating to the vector method) 7, 32, 33 (relating to the bias method) 11, 29, 31, (relating to the probabilistic method) as amended are patentably distinguishable over Heckerman taken singly or in combination with Lim and/or Dempster.

Insofar as claims 2-6, 8-10, 12-24, and 34 are concerned, these claims depend from one of now presumably allowable independent claims 1, 7, and 11 are also believed to be in allowable condition.

### 3. Conclusion

In view of the foregoing remarks, reconsideration of this application and allowance thereof are earnestly solicited. In the event the Examiner considers a personal contact advantageous to the disposition of this case, the Examiner is hereby requested to call Attorney for Applicant(s), Thomas Zell.

Respectfully submitted,

  
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